

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of treating a cervical intraepithelial neoplasia (CIN) in a human, the method comprising:

identifying a human as being less than 25 of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a nucleic acid comprising a nucleotide sequence that encodes a hybrid polypeptide comprising

(i) at least one of the following segments of human papilloma virus (HPV) strain 16 E6:

AMFQDPQERPRKLPQLCTEL (SEQ ID NO:1),

LLRREVYDFAFRDLCIVYRDGNPY (SEQ ID NO:2), or

KISEYRHYCYSLYGTTLEQQYNK (SEQ ID NO:3);

(ii) at least one of the following segments of HPV strain 16 E7:

TLHEYMLDLQPETTDLYSY (SEQ ID NO:4),

QAEPDRAHYNIVTF (SEQ ID NO:5), or

LLMGTLGIVCPICSQKP (SEQ ID NO:6);

(iii) at least one of the following segments of HPV strain 18 E6:

RRPYKLDPDLCTELNTSLQDIEITCVYCKTVLELTEVFEEFAFK (SEQ ID NO:7), or

SVYGDITLEKLTNTGLYNLLIRCLRCQK (SEQ ID NO:8); and

(iv) at least one of the following segments of HPV strain 18 E7:

KATLQDIVLHLEPQNEIPV (SEQ ID NO:9),

HTMLCMCKCEARI (SEQ ID NO:10), or

AFQQLFLNTLSFVCPWC (SEQ ID NO:11).

2-8. (Canceled)

9. (Previously Presented) The method of claim 1, wherein the CIN is cervical intraepithelial neoplasia 1 (CIN1).

10. (Previously Presented) The method of claim 1, wherein the CIN is cervical intraepithelial neoplasia 2 (CIN2), cervical intraepithelial neoplasia 3 (CIN3), or cervical intraepithelial neoplasia 2/3 (CIN2/3).

11-42. (Canceled)

43. (Previously Presented) The method of claim 1, wherein the pharmaceutical composition comprises a microparticle.

44-72. (Canceled)

73. (Currently Amended) The method of claim 1, wherein the hybrid polypeptide comprises the segments AMFQDPQERPRKLPQLCTEL (SEQ ID NO:1), LLRREYVDFARFRLCIVYRDGNPY (SEQ ID NO:2), KISEYRHYCYSLYGTTLQYQNK (SEQ ID NO:3), TLHEYMLDLQPETTDLYSY (SEQ ID NO:4), QAEPDRAHYNIVTF (SEQ ID NO:5), LLMGTLGIVCPICSQKP (SEQ ID NO:6), RRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTVFEFAFK (SEQ ID NO:7), SVYGDITLEKLTNTGLYNLLIRCLRCQK (SEQ ID NO:8), KATLQDIVLHLEPQNEIPV (SEQ ID NO:9), HTMLCMCKCEARI (SEQ ID NO:10), and AFQQLFLNTLSFVCPWC (SEQ ID NO:11).

74. (Previously Presented) The method of claim 1, wherein the hybrid polypeptide does not contain a sequence identical to the sequence of either full length, intact E6 or full length, intact E7 protein from HPV strain 16 or 18.

75. (Previously Presented) The method of claim 1, wherein the hybrid polypeptide comprises a signal sequence.

76. (Currently Amended) The method of claim 75, wherein the signal sequence is the HLA-DR $\alpha$  leader sequence (MAISGVPVLGFFIIAVLMSAQESWA, SEQ ID NO:92).

77. (Currently Amended) The method of claim 1, wherein the hybrid polypeptide comprises the amino acid sequence  
AMFQDPQERPRKLPQLCTELLRRREVYDFAFRDLCIVYRDGNPYKISEYRHCYSYLYGT  
TLEQQYNKTLHEYMLDLQPETDLYSYQAEPDRAHYNIVTFLLMGTLGIVCPICSQKPR  
RPYKLPDLCTELNTSLQDIEITCVYCKTVLELTVFEFAFKSVYGDITLEKLTNTGLYNLLI  
RCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCKCEARIAFQQLFLNTLSFVCPWC  
(SEQ ID NO:12).

78. (Currently Amended) The method of claim 1, wherein the hybrid polypeptide comprises the amino acid sequence  
MAISGVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRRREVYDFAFRDL  
CIVYRDGNPYKISEYRHCYSYLYGTLEQQYNKTLHEYMLDLQPETDLYSYQAEPDRA  
HYNIVTFLLMGTLGIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTVFE  
FAFKSVYGDITLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCK  
CEARIAFQQLFLNTLSFVCPWC (SEQ ID NO:13).

79. (Currently Amended) The method of claim 1, wherein the hybrid polypeptide consists of the amino acid sequence

MAISGVVPLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRRREVYDFAFRDL  
CIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAEPDRA  
HYNIVTFLLMGTGLIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTEVFE  
FAFKSVYGDITLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCKK  
CEARIAFQQFLNTLSFVCPWC (SEQ ID NO:13).

80. (Previously Presented) The method of claim 1, wherein the nucleic acid comprises a plasmid vector.

81. (Previously Presented) The method of claim 1, wherein the nucleic acid comprises a viral vector.

82. (Previously Presented) The method of claim 1, wherein the pharmaceutical composition comprises a microparticle having the nucleic acid encapsulated therein.

83. (Previously Presented) The method of claim 82, wherein the microparticle comprises a copolymer of poly-lactide-*co*-glycolide.

84. (Previously Presented) The method of claim 83, wherein the microparticle is less than 10 microns in diameter.

85. (Previously Presented) The method of claim 1, wherein the pharmaceutical composition comprises an adjuvant.

86. (Previously Presented) The method of claim 1, wherein the pharmaceutical composition is administered via injection.

87. (Previously Presented) The method of claim 86, wherein the injection is intramuscular, subcutaneous, or intracervical.

88. (Currently Amended) A method of treating a CIN in a human, the method comprising:

identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the plasmid vector comprises a nucleotide sequence that encodes a polypeptide comprising a signal sequence and the amino acid sequence

AMFQDPQERPRKLPQLCTELLRRREVYDFAFRDLICIVYRDGNPYKISEYRHYCYSLYGTTLTQQYNKTLHEYMLDLQPETTDLYSYQAEPDRAHYNIVTFLLMGTLGIVCPICSKKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLELTFEFAFKSVYGDLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLCMCKCEARIAFQQLFLNTLSFVCPWC (SEQ ID NO:12).

89. (Previously Presented) The method of claim 88, wherein the CIN is CIN1.

90. (Previously Presented) The method of claim 88, wherein the CIN is CIN2, CIN3, or CIN2/3.

91. (Previously Presented) The method of claim 88, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

92. (Previously Presented) The method of claim 89, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

93. (Previously Presented) The method of claim 90, wherein the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

94. (Previously Presented) The method of claim 88, wherein the pharmaceutical composition is administered via injection.

95. (Previously Presented) The method of claim 94, wherein the injection is intramuscular, subcutaneous, or intracervical.

96. (Previously Presented) The method of claim 89, wherein the pharmaceutical composition is administered via injection.

97. (Previously Presented) The method of claim 96, wherein the injection is intramuscular, subcutaneous, or intracervical.

98. (Previously Presented) The method of claim 90, wherein the pharmaceutical composition is administered via injection.

99. (Previously Presented) The method of claim 98, wherein the injection is intramuscular, subcutaneous, or intracervical.

100. (Currently Amended) A method of treating a CIN in a human, the method comprising:

identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the plasmid vector comprises a nucleotide sequence that encodes a polypeptide comprising the amino acid sequence

MAISGVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRREVYDFA  
FRDLCIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAE  
PDRAHYNIVTFLLMGTLGIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLEL  
TEVFEFAFKSVYGDITLEKLTNTGLYNLLIRCLRCQKATLQDIVLHLEPQNEIPVHTMLC  
MCKCKEARIAFQQFLNTLSFVCPWC (SEQ ID NO:13).

101. (Previously Presented) The method of claim 100, wherein the CIN is CIN1.

102. (Previously Presented) The method of claim 100, wherein the CIN is CIN2, CIN3, or CIN2/3.

103. (Previously Presented) The method of claim 100, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

104. (Previously Presented) The method of claim 100, wherein the pharmaceutical composition is administered via injection.

105. (Previously Presented) The method of claim 104, wherein the injection is intramuscular, subcutaneous, or intracervical.

106. (Currently Amended) A method of treating a CIN in a human, the method comprising:

identifying a human as being less than 25 years of age and as having a CIN; and  
administering to the human an effective amount of a pharmaceutical composition comprising a microparticle comprising a plasmid vector and a polymeric matrix, wherein the plasmid vector comprises a nucleotide sequence that encodes a polypeptide consisting of the amino acid sequence

MAISGVPVLGFFIIAVLMSAQESWAAMFQDPQERPRKLPQLCTELLRRREVYDFA  
FRDLCIVYRDGNPYKISEYRHYCYSLYGTTLEQQYNKTLHEYMLDLQPETTDLYSYQAE  
PDRAHYNIVTFLLMGTLGIVCPICSQKPRRPYKLPDLCTELNTSLQDIEITCVYCKTVLEL  
TEVFEFAFKSVYGDITLEKLTNTGLYNLLIRCLRCQKKATLQDIVLHLEPQNEIPVHTMLC  
MCKCKEARIAFQQFLNLTLSFVCPWC (SEQ ID NO:13).

107. (Previously Presented) The method of claim 106, wherein the CIN is CIN1.

108. (Previously Presented) The method of claim 106, wherein the CIN is CIN2, CIN3, or CIN2/3.

109. (Previously Presented) The method of claim 106, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

110. (Previously Presented) The method of claim 106, wherein the pharmaceutical composition is administered via injection.

111. (Previously Presented) The method of claim 110, wherein the injection is intramuscular, subcutaneous, or intracervical.

112. (Previously Presented) The method of claim 107, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

113. (Previously Presented) The method of claim 112, wherein the pharmaceutical composition is administered via injection.

114. (Previously Presented) The method of claim 113, wherein the injection is intramuscular, subcutaneous, or intracervical.



115. (Previously Presented) The method of claim 108, the polymeric matrix comprises a copolymer of poly-lactide-*co*-glycolide.

116. (Previously Presented) The method of claim 115, wherein the pharmaceutical composition is administered via injection.

117. (Previously Presented) The method of claim 116, wherein the injection is intramuscular, subcutaneous, or intracervical.